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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/723,549	11/27/2000	Brian Doege	23969-P001US	7916

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EXAMINER

BARRY, CHESTER T

ART UNIT

PAPER NUMBER

1724

DATE MAILED: 03/29/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/723,549

23969  
P1

Applicant(s)

DOEGE ET AL.

Examiner

Chester T. Barry

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 4, 6-7, 10-34 is/are rejected.
- 7) ☒ Claim(s) 5,8,9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Claim Construction

So as not to cast the search and examination net too narrowly, the Examiner is charged with construing pending claims as broadly as the application will reasonably allow without reading limitations from the specification into the claims. Known terms of art used in a claim should be interpreted as the skilled artisan would understand them. Applicant<sup>1</sup> may be his own lexicographer, defining new terms as he sees fit, even modifying known terms to suit his specific purpose, provided such lexicography does not render the metes and bounds of the claims unreasonably imprecise to the skilled artisan so that the notice function of claims may be fulfilled.

Claim 1 is directed to a method, the purpose of which is treating a "small-tank toilet system." Applicant does not appear to have provided the public with an explicit definition of a "small tank toilet system." What is implicitly clear, though, is that although a toilet bowl is a tank in the sense that it contain a small volume of liquid, applicant clearly does not intend for the "tank" of his small tank toilet system to read on a toilet bowl. In applicant's apparatus claims, a "small tank toilet system" requires a small tank separate and apart from a toilet.

The art does not provide a reasonably precise distinction between what is meant by a small tank system and a large tank system. For example, USP 5346245 for a "Portable tank with extending handle," to Budrow describes a 30 gallon portable tank particularly suitable for handling recreational vehicle liquid waste as being of "relatively

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<sup>1</sup> "Applicant" shall mean "applicant" or "applicants," as the case may be.

large capacity,”<sup>2</sup> while applicant does not consider a tank less than 120 gallons as being a large tank. Accordingly, the public must turn to applicant’s remarks to understand what he intended “small-tank” to mean.

Applicant states that a small tank “generally . . . holds approximately . . . 40 gallons of fluid or less,” but the small tank “could be larger”<sup>3</sup> with “large” tanks holding about 120 gallons of flushing fluid. Implicitly, therefore, applicant’s “small-tank toilet system” is a toilet system not capable of containing as much as about 120 gallons of flushing fluid. That is, applicant’s small-tank system is smaller than about 120 gallons. It is clear, therefore, that applicant’s small tank element, for example, would not read on a 200 gal waste holding tank of a Boeing 747® aircraft, to the extent that USP 4063315 to Carolan (assigned at issuance to Boeing) accurately reports the waste holding tank size of actual 747® craft. Nor would it read on that of the railroad car holding tank of USP 5956780 to Tyler (col 8 line 30).

With respect to portability, the “small-tank toilet system” needn’t necessarily be portable because all that applicant says in this regard is that small-tank toilet systems are often utilized in portable systems, such as airplanes, busses, campers, trains, and boats. Another example applicant gives of a “small-tank toilet system” is a free-standing portable toilet that can be located temporarily in a stationary place.<sup>4</sup> Stating that larger systems all having a particular feature (e.g., portability) in common does

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<sup>2</sup> Admittedly, Budrow’s tank is not the tank of the toilet system itself, but the wheeled, portable temporary holding tank into which recreational vehicle toilet system holding tanks are emptied. Nevertheless, one would understand that Budrow intends for the portable wheeled holding tank to contain the full contents of the RV’s toilet system holding tank. By implication, Budrow therefore considers a 30 gal. RV toilet system holding tank to be one of “relatively large” holding capacity.

<sup>3</sup> Page 2 lines 8-9.

require that a defined sub-system (e.g., toilet system) itself be characterized by that same feature.

Moreover, while applicant and the prior art typically show portable toilet systems having recirculating flushing liquids, there is no requirement that a "small tank toilet system" employ recirculation of the flushing fluid. See, for example, <http://newsignal.com/>,<sup>5</sup> describing a training toilet system<sup>6</sup> having a holding capacity of less than about 120 gal. The skilled artisan would understand that the holding tank in this toilet training toilet system is accomplished by rinsing the waste out from the tank by "once through" flushing with tap water, for example.

Finally, although a fluid is broadly recognized in most technical arts as being any flowable material, e.g., gas, liquid, slurry, mist, powder, granules, etc., and although gas-only, e.g., vacuum, flushing fluid type toilet sub-systems in aircraft were known,<sup>7</sup> applicant appears to use the term "fluid" narrowly defined as a material that is

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<sup>4</sup> Page 2 lines 2 – 5.

<sup>5</sup> Not necessarily prior art because last updated on 10/8/2001.

<sup>6</sup> The training toilet shown appears to meet the "system" requirement of the "small-tank toilet system" element because it is unclear what minimal structural elements the word "system" implies. That is, the combination of music-making structure and waste containment structure shows a "system."

<sup>7</sup> As explained in USP 6223361 to Rozenblatt:

Conventional aircraft vacuum toilets are effective for disposing of such food waste products for a number of reasons. First, they are connected through much larger lines, typically two inches in diameter, to waste holding tanks. Further, conventional aircraft vacuum toilet systems transfer waste from the toilet bowl to the waste holding tanks via a differential pressure action, thereby ensuring immediate and complete evacuation. In particular, the air pressure in the toilet bowl is at cabin pressure (which is pressurized for the safety and comfort of those on board), while the drain line is maintained at a much lower air pressure from a source of vacuum. This source is typically either a vacuum pump or the atmospheric pressure outside of the airplane, which is very low at cruising altitudes of thousands of feet above sea level. This differential reaches approximately 8.5 p.s.i. at an altitude of about 35,000 feet. Thus, when the flush valve separating the two atmospheres is opened, a strong vacuum action results and powerfully draws the contents of the toilet bowl into the waste holding tanks.

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predominantly a liquid insofar as the units "gallons" were used. The unit gallons is conventionally used to denote the volume of liquids. It is not conventionally used in this art to describe the volume of gases or mists. Accordingly, "flushing fluid" is construed narrowly as a "flushing liquid." The scope of search and examination will proceed on that basis. If applicants dispute the examiner's construction of "flushing fluid" as limited to a flowable material predominated by liquid rather than by a gas such as air, **now** is the time to alert the examiner, i.e., proxy for the public at large, to that view so that other prior art may be potentially applied appropriately.

Accordingly, applicant's "small-tank toilet system" appears to be implicitly limited to a toilet system having a tank not capable of holding as much as about 120 gallons of liquid without regard to portability or recirculation of flushing fluid. Insofar as applicant has support for the portability and fluid recirculating feature, he may wish to consider distinguishing his invention over non-portable, in-ground toilet systems and non-recirculating toilets on that basis. This remark should not be construed as an indication of allowable subject matter.

Each of the foregoing claim element construction observations were made without regard to the doctrine of claim differentiation because none of the dependent claims address the system size, system portability, fluid recirculation, or fluid phase (gas or liquid) aspect of the claimed invention.

The method requires, therefore, combining a pre-selected bacteria, a pre-selected surfactant, and a flushing liquid. The method also requires that the flushing liquid be charged to the small-tank toilet system, but does not require that the contents of the toilet be flushed by the flushing liquid. In this regard, claim 1 merely requires that a flushing liquid, e.g., water, be placed within the toilet. Claim 1 does not require that the bacteria and surfactant be combined with each other, or either of these materials with the flushing liquid, before the flushing liquid is charged to the toilet system. Accordingly, the bacteria and/or surfactant can be combined with the flushing liquid before, during, or after the flushing liquid is placed within the toilet system.

#### Claim Rejections

Claims 1, 2, 6, 7, 21-26, 29-34 are rejected under 103(a) as being obvious over USP 4655794 to RICHARDSON in view of applicant's admissions as to the state of the prior art.

RICHARDSON describes combining a pre-selected bacteria, e.g. *B. subtilis* (col 4 line 30, hereinafter "4/30"), a pre-selected surfactant, e.g., 5% nonionic surfactant 4/39, and a flushing liquid, e.g., 1100 gal. tap water 4/19. Once mixed together, the composition is charged directly to the side of the commode, flushed down the toilet, and taken to a holding tank 4/55-62. The reference teaches that this cleaning composition "has been used" with success in boats 5/4. But for Richardson's failure to state the size of the holding tanks of the boats in which the composition has been used, the reference would anticipate claim 1.

Applicant admits that "small-tank toilet systems" are "often utilized" on boats (application page 2). Therefore, it would have been obvious to have provided the boat described by Richardson, i.e., the boat in which the Richardson composition has been used with success, with a "small-tank" type toilet system in view of the common practice of using "small-tank" type toilet systems on boats, as admitted.

Applicant alleges that an ammonia odor problem exists in prior art small-tank toilet systems, but is not prevalent in other systems, such as large-tank systems (page 5 lines 21-24). Applicant solves this problem by using a surfactant. At least two of applicant's disclosed surfactants, i.e., NP-9 and Surfynol 104, are nonionic surfactants.<sup>8</sup> Richardson also uses a nonionic surfactant.

Use of coloring agents or deodorizers is conventional in this art. See claims 6,7,24-26. Selection of the relative amounts of compounds in a formulation would have been obvious. Per claims 29 – 34, it was known to combine a small tank toilet with an airplane, bus, camper, train, boat, free-standing toilet. Combination of the small tank toilet of RICHARDSON with any of these types of known combinations of structures and small tank systems would have been obvious.

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<sup>8</sup> NP-9 appears to be nonylphenol ethoxylate 9EO (source: <http://www.tomah3.com/Documents/P-06e.pdf> dated 5/6/96 downloaded 1/11/02). According to [http://www.gsc.state.tx.us/spec\\_lib/180apltable.html](http://www.gsc.state.tx.us/spec_lib/180apltable.html), NP-9 is a nonionic surfactant available from Union



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35 USC §112, 2<sup>nd</sup> paragraph

Claims 3 – 4, 10 – 17, 18, 19, 20, 23-24, 27-28 are rejected under 35 USC §112, 2<sup>nd</sup> paragraph, for failing to particularly point out and distinctly claim the subject matter for which protection is sought.

Each of these claims require that the bacteria be “combined with the surfactant in a weight ratio” from about 10% to about 50%. It is not clear if 10 parts bacteria to 90 parts surfactant falls literally within the scope of this claim, or if 10 parts bacteria to 100 parts of the combination of bacteria and surfactant falls literally within the scope of this claim. Alternatively, as similar but different language found at claim 11 step (d), for example, suggests, whether it is the combination of bacteria and surfactant that make up about 10% to about 50% of the entire composition, i.e., including flushing fluid, but presumably excluding any liquid waste, irrespective of the relative proportions of bacteria and surfactant.

The qualifier “about” in the expression “about 50%” recited at claim 11 part (d) is objectionable. Claim 11 requires that the composition be at least 50% filler and as much as 50% bacteria/surfactant mixture.<sup>9</sup> Once the specified minimum amount of filler (50%), food source (0.1%), and deodorant 0.05% has been added, how does one manage to squeeze in anything more than 49.85% bacteria/surfactant mixture? The claim allows for as much as “about 50%” bacteria / surfactant mixture. Requiring the public to construe “about 50%” as “not more than 49.85% and still nearly 50%” is

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Carbide Corp. Surfynol 104 appears to be an ethoxylate available from Air Products, Inc., as shown by [http://www.airproducts.com/Surfynol/pdf2/bio\\_tox\\_info.pdf](http://www.airproducts.com/Surfynol/pdf2/bio_tox_info.pdf).

<sup>9</sup> But not less than 5% BS mixture.

unreasonable. Put differently, any construction of "about 50%" which excludes 50% from the possible percentages meeting the claim element is unreasonable.

Claim 4 is rejected under 35 USC 112, second parag., because "weight ration" cannot be understood.

Per claim 5, it is unclear what is meant by utilization of the system of claim 2 "in a group consisting of airplanes, busses, campers, . . . " etc. Is applicant attempting to claim a single method of simultaneously treating waste from a variety of disparate modes of transportation in one toilet system? If so, it is unclear how waste from an airplane is combined with that from a boat to be processed by the small tank system.

Per claim 10, it is unclear how specifying that the filler is this-or-that and the food source is this-or-that constitutes "steps" (" . . . further comprising the steps of . . . "). This aspect of the rejection may be over come by reciting claim 10 generally as follows: The method of claim 9 wherein (a) . . . and (b) . . . , said method further comprising (c) . . . and (d) . . . . See also claims 11-12, 15-16 in this regard.

Per claim 15, in cases in which the "flushing fluid" is water, it is unclear if the mass of the "flushing fluid" would be included or excluded from the calculation of the relative amount of "the" water present per claim 15 (a) because of the use of the definite article "the." "[T]he water" appears to refer only to the water recited in claim 14(a).

Per claim 18, it is unclear how "repeating" step (f) can itself be repeated. It 's suggested that in step f, "(f)" be changed to "(e)."

Subject Matter Allowable over Prior Art

Claims 5, 8, 9 are objected to as being dependent on a rejected base claim, but would be allowable if presented in independent form.

Claims 27 – 28 are objected to as being dependent on a rejected base claim, but would be allowable if presented in independent form and amended to overcome the 325 USC §112(2) rejection noted above.

Application Observations

Commercial information about VERSENE 200 could not be found as of 1/11/02. The web site at <http://www.dow.com/versene/prod.htm> describes various EDTA VERSENE 100-series and VERSENE 220 products, but not VERSENE 200. Insofar as the alleged unexpected benefits accrue from selection and combination of a surfactant with the bacteria, please confirm the identity of the surfactant actually used, if actual tests were performed.



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3/23/02